SPECTROSCOPIA MOLECULAR

Un bulletin mensual de novas e informationes de interesse e valor al spectroscopistas molecular

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SUMMARIOS DE ARTICULOS FUTUR

Methanos Substituite. XXIII. Datos Spectral Infrarubie, Constantes Rotational, Tractamentos Del Coordinatas Normal, E Proprietates Thermodynamic Pro CD_3Br E CH_3Br. Herman B. Weissman, Richard B. Bernstein, Shirley E. Rosser, Arnold G. Meister, e Forrest F. Cleveland. Instituto Technologic de Illinois, Chicago 16. Submittite al Journal of Chemical Physics le 19 de julio 1954.

SPECTROS INFRARUBIE esseva obtenite inter 400 e 4000 kaysers con prismas de KBr e NaCl. Le fundamentales a_1 pro CD_3Br es 2157, 993, e 578 K; pro CH_3Br illos es 2972,1305, e 611 K. Pro CD_3Br, un analyse per quadratos minime del numeros de undas del sub-bandas de σ_6(e) da pro B_1, A_1, ζ, e σ_o le valores 0,255 K, 2,529 K, 0,150, e 712,3 K; pro σ_5(e) le valores esseva 0,257 K, 2,530 K, -0,339, e 1056,2 K. Pro σ_4(e) = 2293 K, le sub-bandas non esseva resolvite, sed le regula de summa dava ζ_4 = 0,240. Le valor microundic de B_o esseva usate. Le signos de $B_1 - B_o$ pro σ_6 e σ_5 es le mesme como illos previemente obtenite pro CH_3I per uso del curvas a alte dispersion de Lagemann e Nielsen.

Pro CH_3Br, un analyse per quadratos minime del datos de grilliage de Bennett e Meyer dava pro σ_6(e): 0,315 K, 5,144 K, 0,217, e 955,4 K; pro σ_5(e): 0,304 K, 5,062 K, -0,242, e 1448,2 K; e pro σ_4(e): 0,321 K, 5,153 K, 0,064, e 3055,6 K. Le signo de $B_1 - B_o$ pro σ_6 es le mesme como pro CH_3I, sed le signos pro σ_5 e σ_4 es revertite, Iste inconsistentia es presumibilemente causate per le precision limitate con le qual le duo parve constantes $B_1 - B_o$ e $(A_1 - A_o) - (B_1 - B_o)$ pote esser determinate per le methodo de quadratos minime. Le valores le plus probabile del origines del bandas es: pro CH_3Br, 954,5, 1443,8, e 3056,7; e pro CD_3Br, 711,6 e 1056,4 K. (σ_4 non esseva resolvite, si nulle origine de banda pote esser obtenite.)

Le valores principal del energia potential es: f_b = 2,8631 md/A, f_h = 5,1199 md/A, f_{hh} = 0,53535 md A/rad^2, e f_{bh} = 0,62871 md A/rad^2. In plus, valores es date pro 13 constantes de interaction. (b = Br, h = H o D, bh = Br-C-H, etc.)

Pro CD_3Br, le valores de $(H^o - E_o^o)/T$, $-(F^o - E_o^o)/T$, S^o, e C_p^o a 100, 273,16, 298,16, 900, e 1550°K es respectivemente: 7,95, 42,66, 50,61, 8,00; 8,75, 50,86, 59,61, 11,07; 8,98, 51,63, 60,61, 11,68; 14,23, 64,09, 78,32, 20,38; e 17,57, 72,74, 90,31, e 23,44 cal grad^{-1} mole^{-1}. Pro CH_3Br, le valores correspondente es: 7,95, 41,41, 49,36, 7,97; 8,37, 49,51, 57,88, 9,72; 8,50, 50,25, 58,75, 10,14; 12,63, 61.51, 74,14, 18,19; e 15,87, 69,25, 85,12, e 22,00. Valores pro 27 altere temperaturas in iste region es date.

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Spectros Rotational de RbCl per le Methodo de Fasce Molecular e Resonantia Electric. J. W. Trischka e R. Braunstein. Universitate Columbia, New York, N. Y. Submittite al Phys. Rev. le 17 de augusto 1954.

IE TRANSITIONES rotational pro le qual J = 0→1 esseva studiate per le methodo de fasce molecular e resonantia electric pro le prime tres statos vibrational v = 0, 1, e 2 de $Rb^{85}Cl^{35}$ e pro v = 0 de $Rb^{87}Cl^{35}$. Le constantes molecular es:

(continuate al pagina 60)

SI ON SE AVANTIA confidentemente in le direction de su visiones e essaya viver le vita que on ha imaginate, on incontrara un successo inexpectate in horas ordinari.

-- THOREAU.

TRACTAMENTOS DEL COORDINATAS NORMAL DE MOLECULAS POLYATOMIC

Salvador M. Ferigle e Alfons Weber
Instituto Technologic de Illinois, Chicago 16, Illinois
[continuate ab Spec. Mol. 3, 53 (1954)]

5.21 Moleculas Normal. Un molecula es designate como normal quando il ha nulle grande motiones interne, e quando in le stato con energia de vibration minimal (v=0) illo es considerate como un corpore rigide -- le energia del puncto zero (v = 0) essente negligite. Si le molecula non es linear, il ha sex variabiles α_p (M =6) le quales describe le motion classic del corpore rigide. Istos es le tres coordinatas de un puncto fixate (ordinarimente le centro de massa) e tres variabiles que describe le orientation de un systema de axes fixate in le corpore con respecto al axes fixate in le spatio. Istos es usualmente prendite como le angulos Euler, le angulos que describe tres rotationes infinitesimal.

Lassa le indice k esser findite in duo indices i e a, ubi i = x, y, z e a = 1, 2, ..., N. N es le numero de atomos in le molecula. Assi x_{ia} es le coordinata i del atomo a in le systema de axes fixate in le spatio. Le sequente nomenclatura essera usate:

$\underline{R}$: vector de position del origine 0' del systema movente con respecto al origine 0 fixate in le spatio,

$\underline{r}_a$: vector de position del atomo a con respecto a 0',

$\underline{r}_a^{\,0}$: vector de position del atomo a in le configuration de equilibrio,

$\underline{d}_a = \underline{r}_a - \underline{r}_a^{\,0}$: vector de displaciamento del atomo a,

$\underline{e}_i$: vector unitari secundo le axe i fixate in le spatio, e

$\underline{\varepsilon}_i$: vector unitari secundo le axe i movente.

Proque le displaciamentos depende linearmente de le q_j, nos pote scriber

$$\underline{d}_a = \sum_j \underline{d}_{aj}\, q_j \qquad (68)$$

e

$$\underline{r}_a = \underline{r}_a^{\,0} + \sum_j \underline{d}_{aj}\, q_j,$$

si que

$$x_{ia} = (\underline{R} + \underline{r}_a) \cdot \underline{e}_i = (\underline{R} + \underline{r}_a^{\,0}) \cdot \underline{e}_i + \sum_j \underline{d}_{aj} \cdot \underline{e}_i\, q_j \qquad (69)$$

e ab Eqs. 62 e 69, nos obtene

$$\left.\begin{aligned} F_{ia} &= (\underline{R} + \underline{r}_a^{\,0}) \cdot \underline{e}_i \\ f_{iaj} &= \underline{d}_{aj} \cdot \underline{e}_i. \end{aligned}\right\} \qquad (70)$$

Per uso del Eqs. 70, le elementos de A, B, e C date per Eqs. 64 deveni

$$A_{pp'}^{\,0} = \sum_a m_a \frac{\partial(\underline{R} + \underline{r}_a^{\,0})}{\partial\alpha_p} \cdot \frac{\partial(\underline{R} + \underline{r}_a^{\,0})}{\partial\alpha_{p'}},$$

$$A_{pp'j} = \sum_a m_a \left(\frac{\partial(\underline{R} + \underline{r}_a^{\,0})}{\partial\alpha_p} \cdot \frac{\partial \underline{d}_{aj}}{\partial\alpha_{p'}} + \frac{\partial(\underline{R} + \underline{r}_a^{\,0})}{\partial\alpha_{p'}} \frac{\partial \underline{d}_{aj}}{\partial\alpha_p} \right), \qquad (71)$$

$$A_{pp'jj'} = \sum_a m_a (\partial \underline{d}_{aj}/\partial\alpha_p) \cdot (\partial \underline{d}_{aj'}/\partial\alpha_{p'}),$$

$$B_{pj}^{\,0} = \sum_a m_a\, \partial(\underline{R} + \underline{r}_a^{\,0})/\partial\alpha_p \cdot \underline{d}_{aj},$$

$$B_{pjj'} = \sum_a m_a\, \partial \underline{d}_{aj}/\partial\alpha_p \cdot \underline{d}_{aj'},$$

e

$$C_{jj'} = \sum_a m_a\, \underline{d}_{aj} \cdot \underline{d}_{aj'}.$$

Lassa nos obtener nunc le derivatos con respecto a α_p, le quales appare in Eq.71. Quando α_p corresponde a un translation,

$$\left.\begin{aligned} \partial\underline{R}/\partial\alpha_p &= \underline{e}_p\ , \\ \text{e}\qquad \partial\underline{r}_a^{\,o}/\partial\alpha_p &= \partial\underline{d}_{aj}/\partial\alpha_p = 0; \end{aligned}\right\} \quad (72)$$

e quando α_p corresponde a un rotation,

$$\left.\begin{aligned} \partial\underline{R}/\partial\alpha_p &= 0\ , \\ \partial\underline{r}_a^{\,o}/\partial\alpha_p &= \underline{l}_p \times \underline{r}_a^{\,o}\ , \\ \text{e}\qquad \partial\underline{d}_{aj}/\partial\alpha_p &= \underline{l}_p \times \underline{d}_{aj}\ , \end{aligned}\right\} \quad (73)$$

ubi $\underline{l}_p$ es un vector unitari secundo le axe de rotation correspondente a α_p. Si le α_p es considerate como rotationes infinitesimal super le axes movente,

$$\underline{l}_p = \underline{\varepsilon}_p. \quad (73a)$$

Lassa nos scriber le Eqs. 67 explicitemente per prender $B_{pj}^{\,o}$ ex Eqs. 71. Quando α_p corresponde a un translation, on obtene per uso de Eqs. 72

$$B_{pj}^{\,o} = \sum_a m_a\, \partial(\underline{R} + \underline{r}_a^{\,o})/\partial\alpha_p \cdot \underline{d}_{aj} = \underline{e}_p \cdot \sum_a m_a\, \underline{d}_{aj}\ ,$$

e Eqs.67 require que

$$\sum_a m_a\, \underline{d}_{aj} = 0$$

e

$$\sum_{aj} m_a\, \underline{d}_{aj}\, q_j = \sum_a m_a\, \underline{d}_a = 0\ , \quad (74)$$

le qual es le prime condition Eckart. Ab le definition de $\underline{d}_a$, Eq. 74 es le equivalente de

$$\sum_a m_a\, \underline{r}_a = \sum_a m_a\, \underline{r}_a^{\,o},$$

le qual significa que si 0' es prendite al centro de massa del molecula in le configuration de equilibrio, tunc 0' essera semper al centro de massa del molecula.

Quando α_p corresponde a un del coordinatas rotational (angulo Euler o rotation infinitesimal), tunc per uso de Eqs. 73 nos obtene

$$B_{pj}^{\,o} = \sum_a m_a\, \partial\underline{r}_a^{\,o}/\partial\alpha_p \cdot \underline{d}_{aj} = \sum_a m_a (\underline{l}_p \times \underline{r}_a^{\,o}) \cdot \underline{d}_{aj} = \underline{l}_p \cdot \sum_a m_a\, \underline{r}_a^{\,o} \times \underline{d}_{aj}\ ,$$

e Eqs.67 require que

$$\sum_a m_a\, \underline{r}_a^{\,o} \times \underline{d}_{aj} = 0,$$

o que

$$\sum_{aj} m_a \underline{r}_a^{\,o} \times \underline{d}_{aj} q_j = \sum_a m_a \underline{r}_a^{\,o} \times \underline{d}_a = 0, \quad (75)$$

le qual es le secunde condition Eckart. Le duo conditiones Eckart defini le systema movente. Il es necessari describer le vibrationes del atomos in iste systema particular pro assecurar le parvitate del B_{pj}.

Si le atomos in le configuration de equilibrio es in un recte linea, solmente cinque coordinatas es necessari pro definir le motion del structura linear rigide. Istos es le coordinatas del centro de massa e duo angulos. Ergo il ha in iste caso $3N - 5$ grados de libertate vibrational e $3N - 5$ coordinatas q_j. Proque Eq. 67 da solmente cinque conditiones pro definir le axes movente, istos non essera unicamente determinate. Le transformation es facite como ante, un del angulos apparente como parametro arbitrari. Lassar iste angulo esser zero completa le definition del axes movente.

Si le molecula possede grande motiones interne le qual non pote esser considerate como parve vibrationes (como pro le moleculas NH_3 e ethano supra-mentionate) Eq.67 da conditiones additional le quales debe esser considerate separatemente in tal caso.

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Il remane duo parcellas additional in iste serie. Tunc illos omnes essera colligite in un monographia, Spectros Molecular. II. Tractamentos Del Coordinatas Normal De Moleculas Polyatomic. Le precio probabile de illo es $1.00 nette. Requestas pro iste volumine debe esser adressate al redactor de iste periodico.

SUMMARIOS DE ARTICULOS FUTUR
(continuate ab pagina 57)

	$Rb^{85}Cl^{35}$	$Rb^{87}Cl^{35}$
Y_{01} (Mc/sec)	2627,394 ± 0,002	2609.779 ± 0,003
$-Y_{11} \approx \alpha_e$ (Mc/sec)	13,601 ± 0,005	13,464 ± 0,005
$Y_{21} \approx \gamma_e$ (Mc/sec)	0,021 ± 0,002	0,021 ± 0,002
B_e (Mc/sec)	2627,414 ± 0,010	-
r_e (A)	2,78670 ± 0,00006	-

Le constantes quadrupolic (eqQ) e gyro-rotational (c) de $Rb^{85}Cl^{35}$ es:

v	$(eqQ)_{Rb}$ Mc/sec	$(eqQ)_{Cl}$ Mc/sec	c_{Rb} kc/sec	c_{Cl} kc/sec
0	-52,675 ±0,005	0,774 ± 0,009	0,3 ±0,3	0,0 ±0,8
1	-52,306 ±0,030	0,612 ± 0,013	-	-
2	-51,903 ±0,04	0,470 ± 0,01	-	-

Pro le stato v = 0 de $Rb^{87}Cl^{35}$, $(eqQ)_{Rb}$ = -25,485 ± 0,006 mc/sec. Le ration del momentos quadrupolic Rb es Q_{85}/Q_{87} = 2,0669 ± 0,0005. Le ration massic del isotopos Rb es M_{85}/M_{87} = 0,9770163 ± 0,0000045.

FUNDAMENTALES DE CIS IHC=CHI

COMO RESULTATO DE discussiones con Dr. H. J. Bernstein del Concilio National de Recerca a Ottawa in Canada nos ha cambiate le assignation del fundamental $\sigma_6(a_2)$ de cis IHC=CHI ab 337 a 664 K (vide Spec. Mol. 3, 31 (1954)). Le valor de 337 previemente date pro iste fundamental pare nimis basse quando comparate con le valor del correspondente fundamental de cis BrHC= CHBr le qual es sub investigation in le laboratorio de Dr. Bernstein. Le nove assignation presuppone que σ_6 coincide con le intensive linea Raman a 664, le qual es presente a causa del existentia de un pauco del trans IHC=CHI in le specimen. Le altere assignationes remane incambiate.

SIDNEY I. MILLER
ALFONS WEBER
FORREST F. CLEVELAND
Instituto Technologic de Illinois
Chicago 16, Illinois, Statos Unite

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LIBRO

Einfuhrung in die Ultrarotspektroskopie (Introduction Al Spectroscopia Infrarubie). Werner Brügel. Verlag Steinkopf, Darmstadt, Germania, 1954. Paginas 366 + xii. Precio, DM 49.

Del paginas in iste libro, 96 es super le theoria, 108 super technicas, 61 super methodos, e 89 super applicationes. Iste introduction es un selection usabile del ben cognoscite principios de spectroscopia infrarubie moderne. Illo contine plus que 600 citationes.

ERNST LIPPERT
Technische Hochschule
Stuttgart, Germania

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NOVAS

A. E. DOUGLAS del division de physica del canadian Consilio National de Recerca ha essite eligite como Fellow del Royal Society of Canada in recognition de su labor in spectroscopia.

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SPECTROSCOPISTAS qui ha recipite subventiones Guggenheim pro le sequente anno, e lor subjectos de studio, es: HERBERT S. GUTOWSKY, Universitate Illinois, spectros microundic in relation al structura de materia; DONALD F. HORNIG, Universitate Brown, studios quantic theoric del structura molecular; GEORGE C. PIMENTAL, Universitate California in Berkeley, spectroscopia infrarubie; e HARRISON SHULL, Collegio Iowa State, proprietates spectral del benzinas substituite.

***

DONALD F. HORNIG etiam ha recipite un subvention Fulbright e laborara con Coulson al Collegio St. Johns del Universitate Oxford in Anglaterra.

PROXIME A 140 scientistas ex 15 paises convenite a Lund in Sveda ab le 1 al 5 de julio pro un congresso international super spectroscopia. Honor special esseva date al memoria de J. R. Rydberg cuje labor super le analyse spectral formava in grande mesura le base pro le avantiamentos moderne in le campo.

***

SPECTROSCOPISTAS William F. Meggers e Wallace R. Brode ha essite eligite como membros del statounitese Academia National de Scientias.

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LUCY W. PICKETT del Collegio Mount Holyoke ha recipite un subvention de $11.000 pro un periodo de duo annos ab le statounitese Fundation National de Scientia in supporto de su recerca super le spectros ultravioletto vacue de seligite compositos organic.

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ALEXANDER GODE presentava un discurso super Interlingua in Scriberes Chimic al symposio super Adjutas Al Uso Del Litteratura Chimic Estranie al 126te convention del Societate Chimic American in New York al 14 de septembre.

***

ERNEST JONES del Universitate Vanderbilt in Nashville, Tennessee, Statos Unite, ha essite promovite ab Professor Assistente de Physica a Professor Associate de Physica.

***

W. C. PRICE de King's College in London presentava duo discursos super Recerca Infrarubie e Ultravioletto a King's College al Universitate Chicago le 14 de augusto. Radiation infrarubie polarisate es usate illac pro determinar le direction del ligamines chimic in fibras. Inter le solidos studiate esseva dimethyltriacetyleno. Potentiales de ionisation es obtenite per uso del spectro ultravioletto a ± 0,01 electron-volts. Dr. Price diceva que Longuet-Higgins va acceptar un position como professor al Universitate Cambridge, le position previemente occupate per professor Lennart Jones.

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PASQUALE PORCELLI ha donate al laboratorio de spectroscopia del Instituto Technologic de Illinois un valorese collection de libros super spectroscopia molecular.

HA ESSITE formate un UNION MUNDIAL PRO INTERLINGUA pro illes qui ha un interesse in le application practic de iste lingua international. Pro information, scribe a Sr. André Schild, Leonhardstrasse 23, Basel, Switza.

COURS D'INTERLINGUA EN 20 LECONS e INTERLINGUA-LEHRGANG IN 20 LEKTIONEN, duo editiones in francese e german, es disponibile ab le mesme adresse a un precio de 3 francos switze (Frs. f. 300, DM 3) .

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J. E. HOLMSTROM del departimento de scientias natural de Unesco (Organisation Educational, Scientific, e Cultural del Paises Unite) ha proponite al chef de su committee que Unesco debe advocar le uso de Interlingua pro summarios scientific e synopses del autores. Si su chef approba, Dr. Holmstrom va mimeographar su proposition e distribuer lo a scientistas pro reciper lor reactiones. Lectores pote scriber lor opiniones in re iste materia a Dr. J. E. Holmstrom a 19, Avenue Kleber, Paris XVI, Francia.

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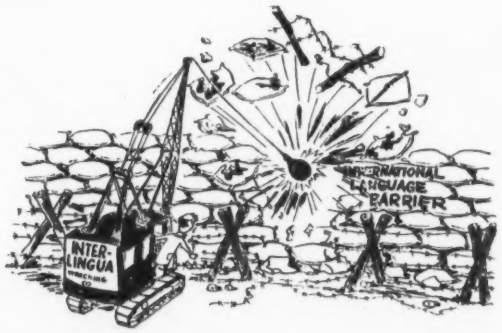
LE CORPORATION Aerojet-General, 6352 N. Irwindale Avenue, Azusa, California, ha necessitate de un physico con experientia in le technicas infrarubie.

***

FRED L. VOELZ, co-director de publication de Spectroscopia Molecular, ha acceptate un position como director de recerca spectroscopic infrarubie al laboratorios recercic Sinclair in Harvey, Illinois, Statos Unite, commenciante le 15 de decembre.



(Ab Industrial and Engineering Chemistry, martio 1954.)

SUMMARIOS DE ARTICULOS RECENTE

Le Spectro Del Molecula CN^+. A. E. Douglas e P. M. Routly, Consilio National de Recerca, Ottawa, Canada. Astrophys. J. 119, 303-311 (1954).

IN LE SPECTRO de un discarga a transverso de He continente un amonta minute de C_2N_2, un grande numero de nove bandas esseva observate in le region 4500 a 1900 A. Dece-un de illos pote esser assignate a duo nove systemas que origina ex le transitiones $^1\Sigma - {}^1\Sigma$ del molecula CN^+. Tabulationes es date del numeros de undas in le brancas P e R del bandas (0,0), (1,1), (2,2), e (3,3) del systema f $^1\Sigma$ - a $^1\Sigma$ - a $^1\Sigma$. Analyses de iste datos da le origines e le constantes rotational del bandas. Ex un analyse vibrational, le constantes pro le tres statos $^1\Sigma$ esseva derivate. Rationes es date pro identificar le molecula emittente como CN^+.

-- Submittite in Interlingua per Morton A. Golub.

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Le Spectro Infrarubie De H_2S In Le Region De 6290 K. H. C. Allen, Jr. e E. K. Plyler, Bureau National de Standards, Washington, D. C. J. Research Natl. Bur. Standards 52, 205-210 (1954).

LE SPECTRO DE absorption a alte resolution esseva determinate pro H_2S ab 6100 a 6500 K. Le structura fin rotational esseva analysate per usar tabellas publicate del energia pro un rotor rigide con un correction classic pro le distortion centrifuge. Le characteristicas de iste region es debite a un forte banda de typo A (1.1.1) centrate a 6289,26 K, e a un debile banda de typo B (0.1.2) a 6288,28 K. Le interaction Coriolis forni le intensitate a render observabile le secunde banda. Le parametros inertial del stato excitate, le quales da le melior accordo pro le lineas calculate, es:

Banda	A	B	C
(1.1.1)	10,398	8,935	5,458
(0.1.2)	10,394	8,918	4,457

-- Submittite in Interlingua per Morton A. Golub.

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Le Spectro Infrarubie Del Bandas σ_2 De $B^{10}F_3$ E $B^{11}F_3$. A. H. Nielsen, Universitate Tennessee, Knoxville, Tenn., S. U., J. Chem. Phys. 22, 659 (1954).

LE SPECTROS infrarubie del bandas σ_2 de $B^{10}F_3$ e $B^{11}F_3$ esseva determinate ab 650 a 750 K. Duo specimens de BF_3 esseva usate, un de illos componite de 93,4 per cento $B^{10}F_3$, le altere del ration de abundantia normal -- 20 per cento $B^{10}F_3$, 80 per cento $B^{11}F_3$. Le resolution complete del structura fin rotational de iste banda de typo parallel esseva obtenite. Le constantes calculate es: pro $B^{10}F_3$, σ_0 = 718,23 K, B_0 = 0,3527$_2$ K, B (v_2 = 1) = 0,3528$_8$ K, D_J = 13,72 · 10-7 K; e pro $B^{11}F_3$, σ_0 = 691,45 K, constantes rotational le mesme como pro $B^{10}F_3$.

— Morton A. Golub.

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Le Spectro De Absorption Del Vapor De Aqua In Le Region Schumann. A. Johannin-Gilles e B. Vodar, Sorbonne, Paris, Francia. J. phys. et radium 15, 223-4 (1954).

LE SPECTRO DE absorption del vapor de aqua a pressiones de 3,15, 4,3, e 8,05 mm Hg ha essite obtenite inter 1600 e 1800 A. Un banda de absorption con plure maximos esseva observate. Le origine del spectro in iste region es discutite.

-- Submittite in Interlingua per Morton A. Golub.

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STATISTICAS VITAL

Numero de contributiones durante le mense passate 5

Distribution: 500 exemplares a 26 paises.

Costo de un numero de 5 paginas per lector per anno $2.00

Contributiones usque nunc per lector per anno $1.01

Numero de exemplares del monographia, "Regulas de Selection pro Spectros Vibrational de Moleculas Polyatomic" vendite usque nunc 60

Presente numero de membros del Societate Del Spectroscopistas Molecular . . 16

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MORTON A. GOLUB va esser le instructor de un classe in Interlingua al Universitate Akron (Akron, Ohio, S. U.) iste anno.

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LUCY W. PICKETT ha essite appunctate como chef del departimento de chimia al Collegio Mount Holyoke (South Hadley, Mass.).

CALENDARIO DE EVENTOS SPECTROSCOPIC

Octobre 14-16. Societate Optic De America, Hotel Ambassador, Los Angeles, California. 5 discursos super spectroscopia molecular: R. W. NICHOLLS, intensitates ; A. L. FLOYD e R. E. KING, probabilitates de transition del bandas violette de CN; R. R. BRATTAIN, disveloppamento de instrumentos pro spectroscopia absorptionic; H. L. WELSH, spectroscopia Raman de gases; R. C. JONES, detectores pro radiation visibile e infrarubie.

Octobre 19. Discurso per Bryce Crawford super applicationes structural e cinetic del spectroscopia infrarubie. Universitate Northwestern, campo Chicago.

Octobre 28-29. Conferentia super Spectroscopia Molecular. Institution of Electrical Engineers, Savoy Place, London, W. C. 2. Infrarubie, Raman, e ultraviolette, con emphase super le plus nove technicas. (Institute of Petroleum, 26 Portland Place, London, W. 1, Anglaterra.)

Novembre 17-18. Symposio "Direct Reading". Boston, Massachusetts, Statos Unite. (Baird Associates, 33 University Road, Cambridge, Mass., Statos Unite.)

Februario 28. Symposio Infrarubie in Pittsburgh, Pennsylvania, Statos Unite. (Baird Associates, le mesme adresse.)

Feb. 28 - Martio 4. Conferentia super Spectroscopia Applicate in Pittsburgh.

Maio 26-27. Societate pro Spectroscopia Applicate, 10me Symposio Annual e exhibition. New York.

Junio 13-17. 10me Symposio Annual super Spectroscopia e Structura Molecular. Columbus. (H. H. Nielsen, Departimento de Physica, Universitate Ohio State, Columbus 10, Ohio, Statos Unite.)

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SOCIETATE DEL SPECTROSCOPISTAS MOLECULAR

UN NOVE MEMBRO de iste societate es:

16(19-VIII-54) Y. P. Varshni, Departimento de Physica, Universitate Allahabad, Allahabad, India.

Altere spectroscopistas qui desira devenir membros debe retornar le formulario de application (pagina 19a), o scriber al Redactor de Spectroscopia Molecular.

SPECTROSCOPIA MOLECULAR es redigite e publicate mensualmente in interlingua per professor Forrest F. Cleveland del Laboratorio de Spectroscopia, Instituto Technologic de Illinois, Chicago 16, Illinois, Statos Unite. Manuscriptos pro publication debe esser submittite a ille adresse.

Le texto original es legite per Dr. Alexander Gode, Chef del Division de Interlingua de Science Service (80 East 11th Street, New York 3, N. Y.). Libros importante super interlingua, disponibile ab ille adresse, es Interlingua-English Dictionary, Interlingua Grammar, e Interlingua A Prime Vista.

Labor editorial es gratis. Le costo de preparation e distribution es recipite ab le spectroscopistas, bibliothecas, e companias. Le directores de publication es senioretta Ruth Grining e senior Fred L. Voelz.

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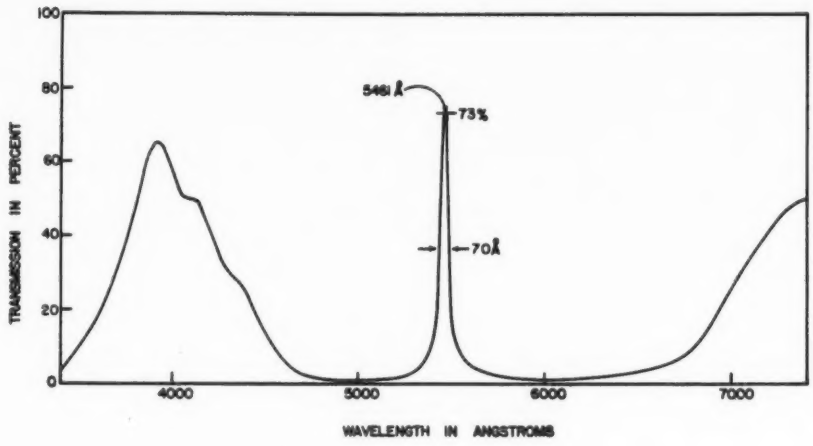
Better Analysis

interference filters

typical transmission curve of a multilayer interference filter



Multilayer

These are high efficiency interference filters characterized by high transmission (approx. 70%) and narrow half-band width (approx. 70 angstroms). They are composed of 15 alternating evaporated layers of high and low index materials laminated between clear glass plates. Absorption is extremely low since the light energy is either transmitted or reflected by these units. They are available in 2″ square plates in the wave length region 3900 angstroms to 7800 angstroms.

The following wavelengths are also available in 1″ square filters:

Mercury Blue.....4358A	Mercury Green.....5461A
Sodium D.....5890A	Hydrogen Alpha.....6563A
Lithium.....6708A	

2″ square.....$50. **1″ square.....$30.**

Tolerances, plus 30A to minus 10A

Standard

Standard filters are composed of 2 evaporated semi-reflecting silver layers, separated by a dielectric layer, laminated between clear glass plates. Band widths are approximately 150A, with transmission between 5 and 35% depending on wavelength. They are very suitable for many applications requiring precision between the multilayer and ordinary glass filters. These are available in a limited number of wavelengths in the range 3400 to 10,000 angstroms.

2″ square.....$25.

Prices on request for multilayer filters larger than 2 x 2 inches.

Prices on request for special multilayer filters down to 20 angstrom halfband widths.

A colored glass filter is supplied with each interference filter for reduction of side bands.

Prices are F.O.B. Cambridge, terms net 10 days — Prices subject to change without notice. There is an additional charge of $15.00 for special cutting of filters. Circular filters are not available. Thickness of filters varies from 4 mm. to 7 mm.

AVAILABLE — SPECIAL BIREFRINGENT FILTERS TO ONE ANGSTROM BANDWIDTH

Technical Circular RD503 Revised 2-54

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HISTORICAL

THE JOURNAL SPECTROCHIMICA ACTA was initiated in 1939 to serve the scientific world as a research journal for the publication of papers on the theory, methods, and results of investigations on the application of spectroscopy to chemical problems. After only two volumes were published, the tragic developments of World War II interrupted publication in 1944. As a result of frequent and urgent appeals from spectroscopists from all parts of the world, efforts were made following cessation of hostilities to revive the journal. In 1947, Dr. Alois Gatterer, founder and first editor of the journal, presented a plan of reactivation to the present Pope Pius XII. This plan was for the publication of the journal as a co-operative venture between the Vatican Observatory and the Springer Verlag, Heidelberg. In harmony with the Pope's interest in sponsoring scientific co-operation among all the nations, this plan was heartily accepted. Volume III of the re-established journal, covering the years 1947-1949, was published under this co-operative arrangement. In 1950 publication of the journal was transferred to Butterworth-Springer Ltd., London, with no change in the aims and objects of the journal. In 1951 the Butterworth-Springer Company was dissolved and publication of the journal was passed to the Pergamon Press Ltd., London, with Dr. P. Rosbaud as Scientific Director. The journal, now in its sixth volume, appears as separate, independent numbers, combined into volumes of about 500 pages.

SCOPE OF THE JOURNAL

ORIGINALLY, primary emphasis was placed on the publication of papers on the qualitative and quantitative determination of composition by means of optical emission spectra. To keep pace with the rapidly expanding application of other spectroscopic approaches employed in solving chemical problems, the editors and publishers recently decided to enlarge the scope of the journal. Original research papers in the fields of emission spectroscopy, absorption spectroscopy in the x-ray, optical, infra-red, and microwave regions, Raman spectroscopy, fluorescence spectroscopy in the x-ray and optical regions, excitation mechanism in spectroscopic light sources, and spectroscopic instrumentation all fall within the present scope of the journal. Contributions are invited on the theory and application of these fields of spectroscopy to the qualitative and quantitative analysis of materials, and to the elucidation of atomic and molecular structure, and the determination of fundamental atomic and molecular constants (energy states, rotational and vibrational constants, transition probabilities, dissociation constants, etc.).

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NEW FEATURES

Review Articles.—The editors and publishers feel that critical review articles which integrate and interpret the published information on specific aspects of the various fields of spectroscopy fulfil an important function in the transmittal of scientific information. An invitation is hereby extended to all spectroscopists interested in undertaking the preparation of a critical review to contact the editors. Suggestions of topics are always welcome. Authors of review articles are paid a commissioning fee of £2 per 1,000 words.

Reports of Spectroscopic Meetings.—Apart from the publication of scientific papers, the editors feel that publication of summaries of spectroscopic meetings and symposia is a necessary responsibility of an international journal. As far as possible, summaries of papers (and abstracts if available) presented at these meetings will be printed in the journal shortly after the meetings are held. Secretaries of the sponsoring organisations are invited to send reports to the appropriate editor.

Spectroscopic Notes.—This Section of the journal will be devoted to the publication of short articles or communications to the Editor which do not qualify as regular journal articles but do present useful information. These would include short descriptions of new instruments or accessories, minor modification of previously published methods or techniques, laboratory aids, and other short communications.

Some important papers published

Über die Emissionspektroskopie Organisher Substanzen mit Hilfe der Elektronenstossanregung in der Glimmentladung—H. Schüler (Hechingen).

Absorption Spectra of Aromatic Hydrocarbons at Low Temperatures. LV Aromatic Hydrocarbon—E. Clar (Glasgow).

Photoelectric Intensity Measurements in the Iron Arc—H. M. Crosswhite (Baltimore).

Spectrochemical Analysis of High Purity Lead—R. C. Hughes (New York).

Ultraviolet Spectral Absorption of Chrysene, its Monomethoxy-Derivatives, and 1:2 Dimethoxychrysene—E. R. Holiday & E. M. Jope (London).

Chemische Vorgänge in den Kohlenelektroden—O. Leuchs (München).

Spectrochemistry of Technetium and Promethium—W. F. Meggers (Washington).

Über ein vollständiges Rechengerät fur Spektrochemische Analysen—H. Kaiser (Dortmund).

Spectrographic Analysis of Complex Oxides—W. J. Price (Manchester).

Infrared Absorption Spectra of Some Aromatic Compounds—C. G. Cannon & G. B. B. M. Sutherland (Cambridge).

L'influence de l'énergie mise en jeu dans la décharge et du caractère de cette décharge sur l'émission des raies spectrales—G. Brucelle (Paris).

Quantitative Spectrographic Analysis of the Rare Earth Elements—V. A. Fassel, H. D. Cook, L. C. Krotz, & P. W. Kehres (Ames, Iowa).

A Direct Spectrographic Method for the Monitoring of Air for Minute Amounts of Beryllium and Beryllium Compounds—W. L. Churchill & A. C. C. P. Gillieson (London).

Calibration of Precision Slits for Spectrographic Analysis—B. A. Mostyn & R. V. Jury (London).

The Fundamental Vibration Band of Hydrogen Iodide—D. R. J. Boyd & H. W. Thompson (Oxford).

Investigations Concerning Light Sources for Spectrum Analysis—A. Bardocz (Budapest).

Short Period Spectral Intensity Measurements—D. W. Steinhaus, H. M. Crosswhite & G. H. Dieke (Baltimore).

Effect of Variation of Circuit Parameters on the Excitation of Spectra by Capacitor Discharges—C. H. Corliss (Washington).

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